

وسهلا



أهلا

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جميع المعلومات للاستخدام
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رئيس قسم التشريح والأنسجة والأجنة

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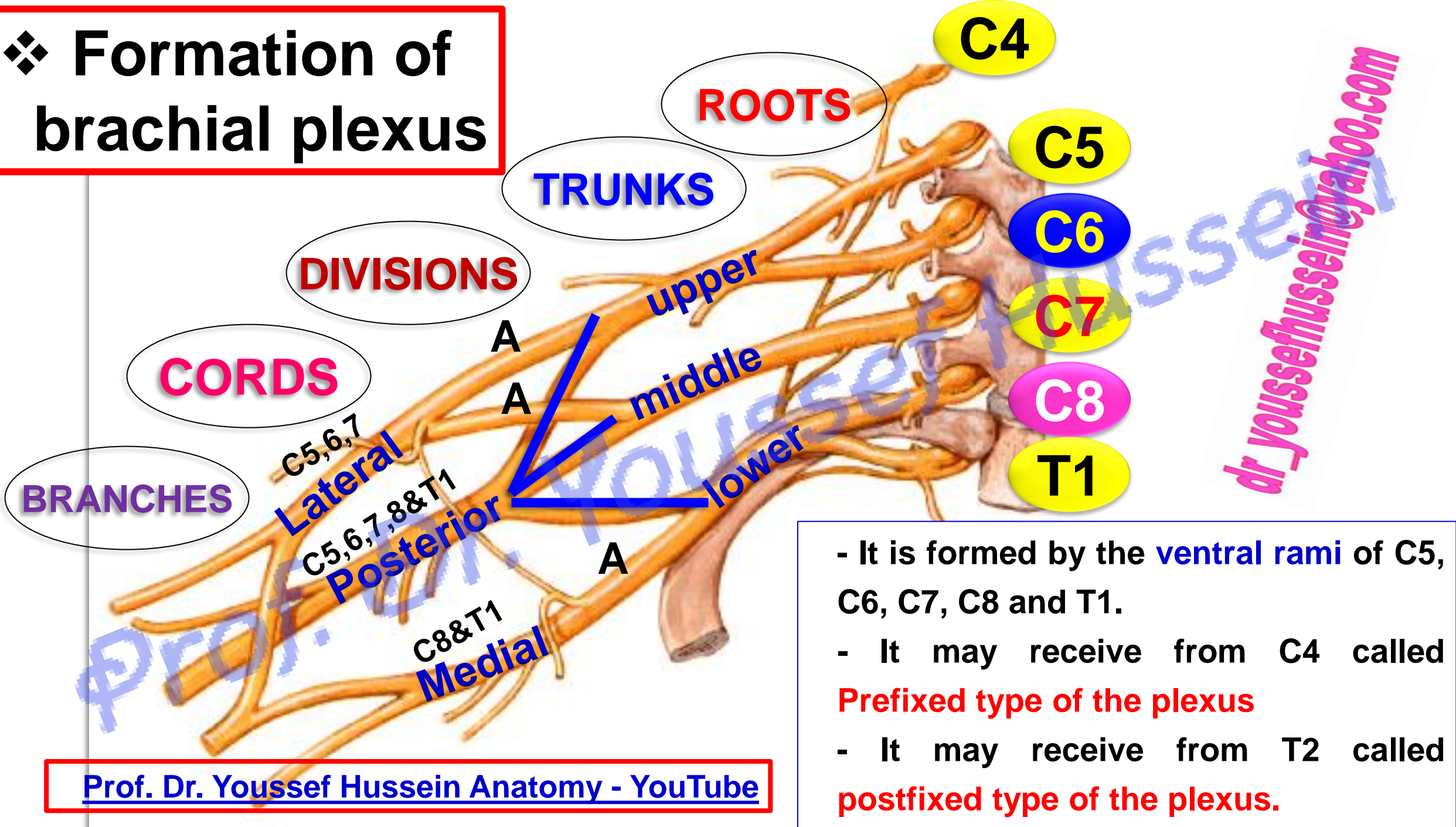
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Brachial plexus

❖ Formation of brachial plexus



- It is formed by the ventral rami of C5, C6, C7, C8 and T1.
- It may receive from C4 called **Prefixed type of the plexus**
- It may receive from T2 called **postfixed type of the plexus.**

**** Stages**

- It is formed of **four stages**: roots, trunks, divisions and cords.

1- First stage (Roots) ventral rami of C5, C6, C7, C8 and T1.

2- Second stage (Trunks) upper, middle and lower in the posterior triangle

a) **The upper trunk** is formed by the union of C5 and C6.

b) **The middle trunk** is a continuation of C7.

c) **The lower trunk** is formed by the union of C8 and T1.

3- Third stage (Divisions) Each trunk divides into anterior and posterior divisions (Behind the clavicle)

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4- Fourth stage (Cords)

a) **Lateral cord**: union of anterior divisions of the upper and middle trunks.

b) **Medial cord**: anterior division of the lower trunk.

c) **Posterior cord**: union of the three posterior divisions of the plexus.

❖ **Branches of upper trunk**

Suprascapular nerve
C5&6

Nerve to subclavius
C5&6

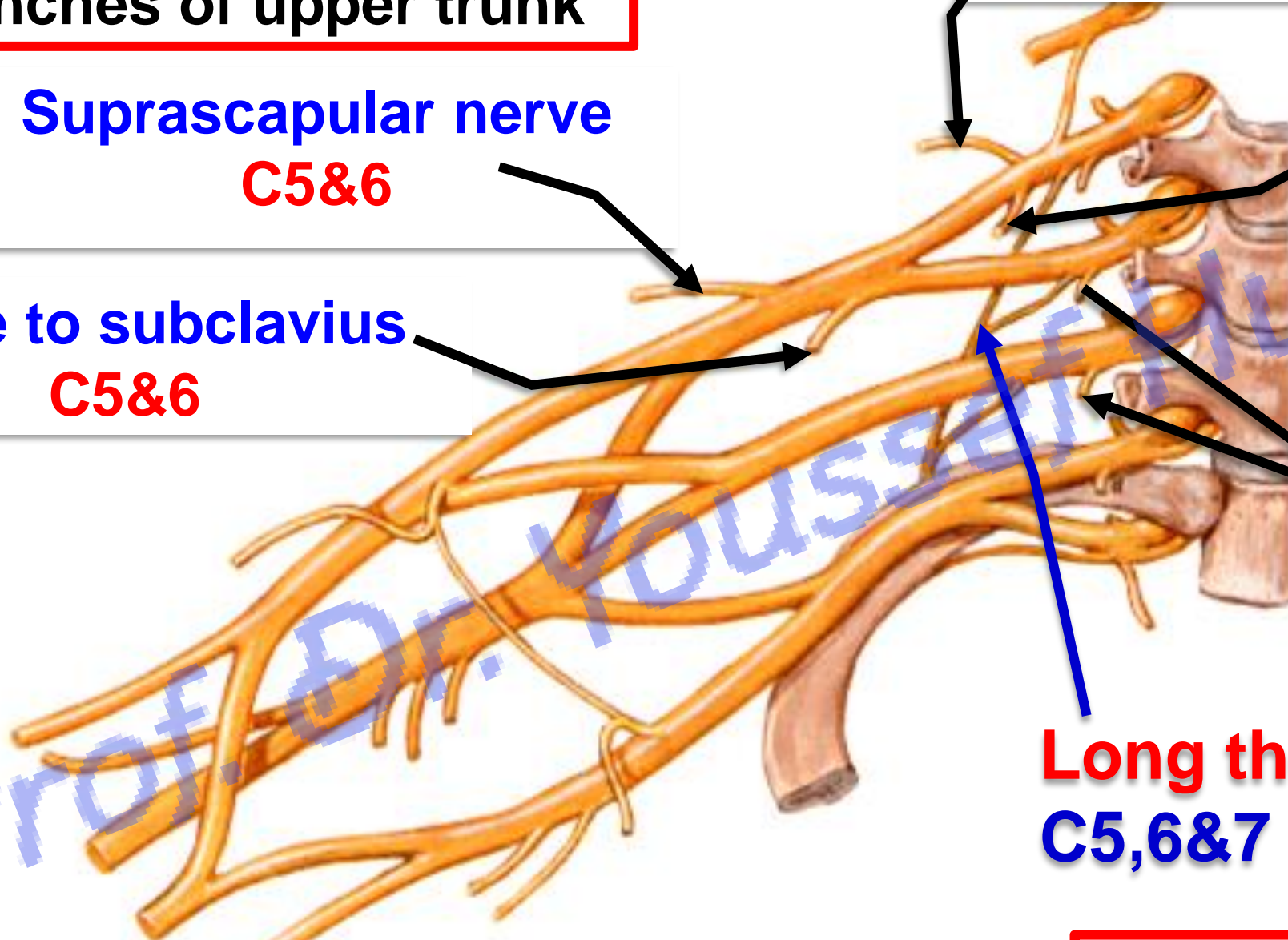
Dorsal scapular nerve C5

Root to phrenic nerve
C5

Muscular to longus colli and scaleni
C5,6,7&8

Long thoracic nerve
C5,6&7

❖ **Branches of roots**

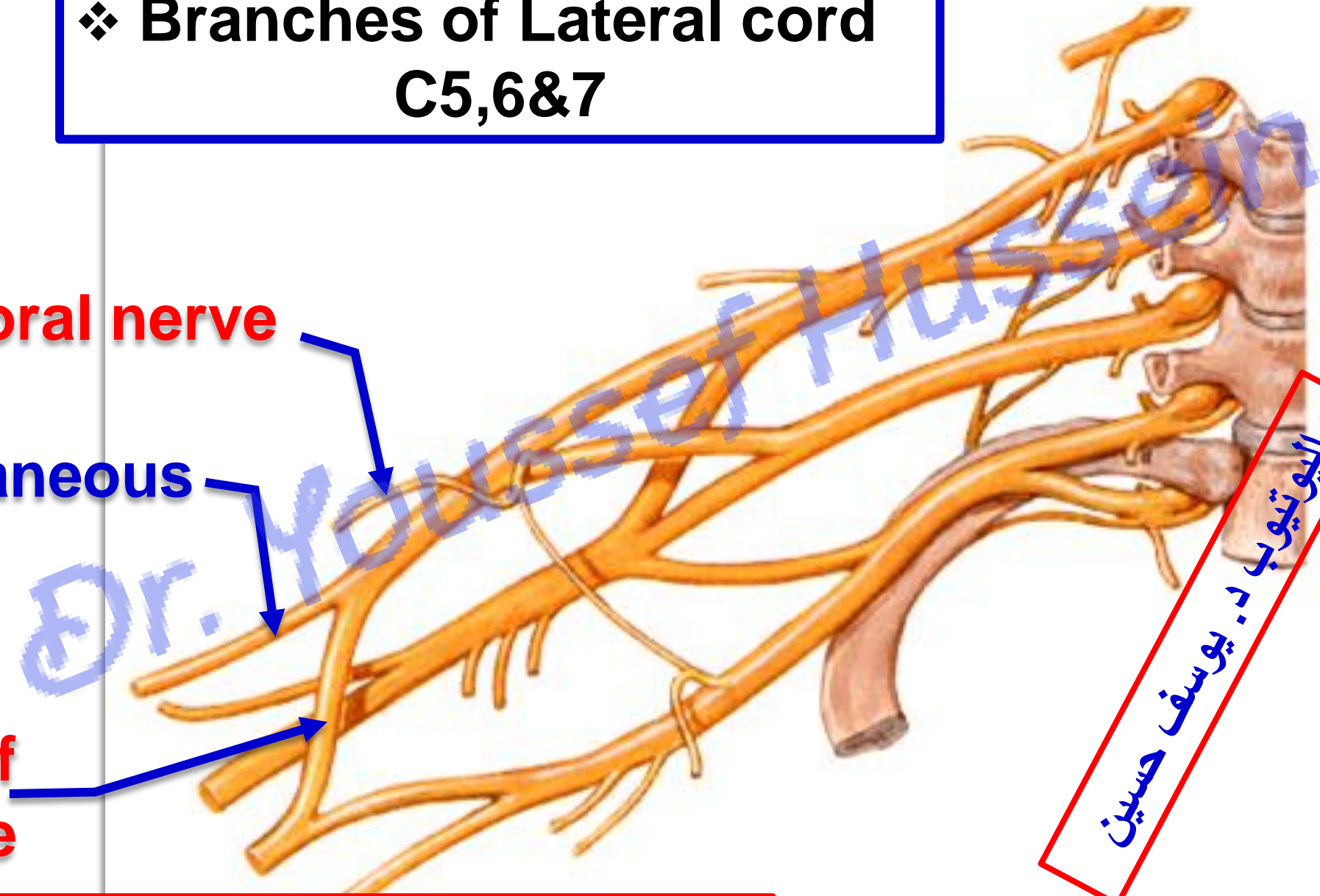


❖ **Branches of Lateral cord
C5,6&7**

Lateral pectoral nerve

**Musculocutaneous
nerve**

**Lateral root of
median nerve**



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❖ **Branches of medial cord**
C8 & T1

**Medial root of
median nerve**

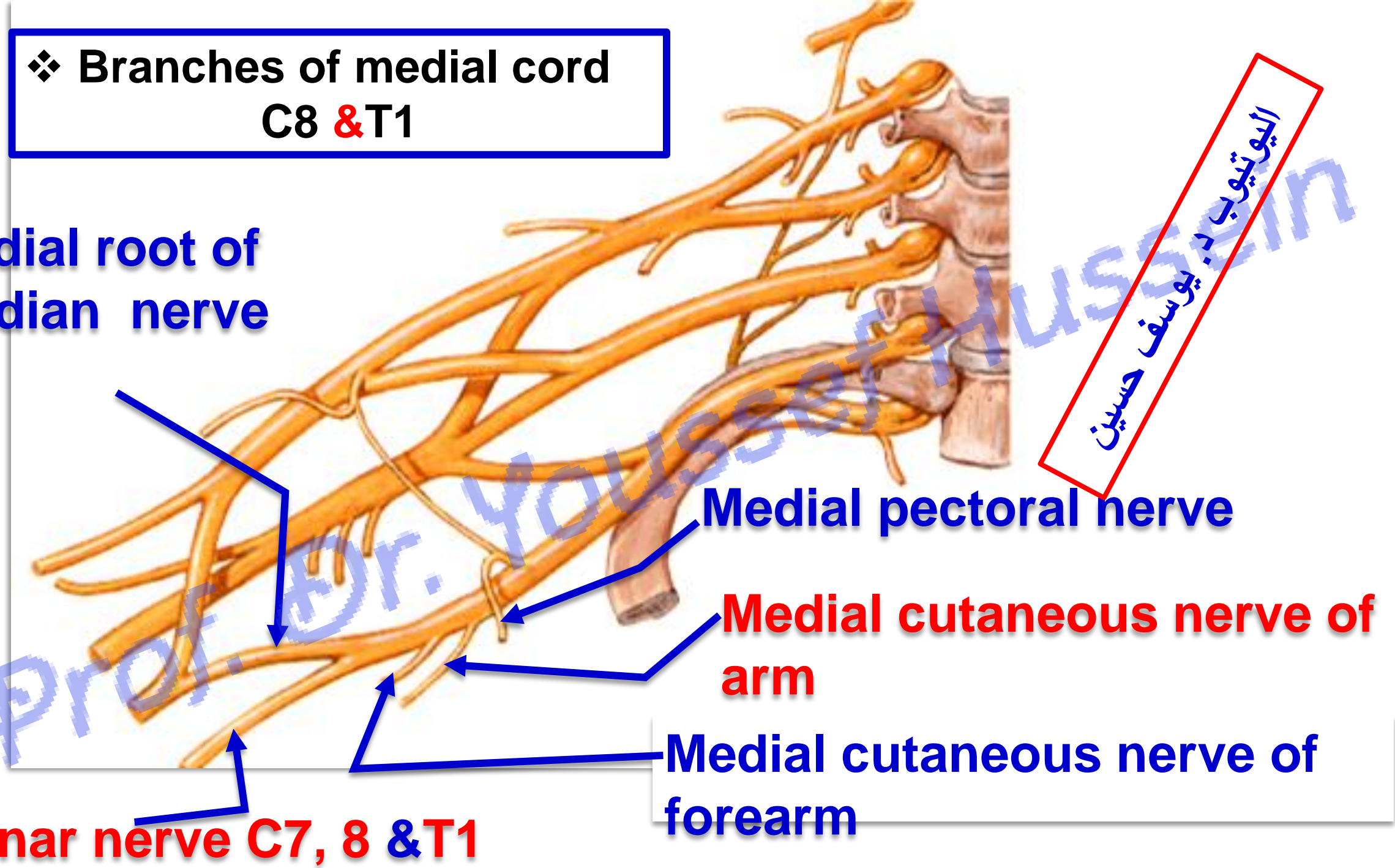
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Medial pectoral nerve

**Medial cutaneous nerve of
arm**

**Medial cutaneous nerve of
forearm**

Ulnar nerve C7, 8 & T1



❖ **Branches of posterior cord
C5,6,7,8&T1**

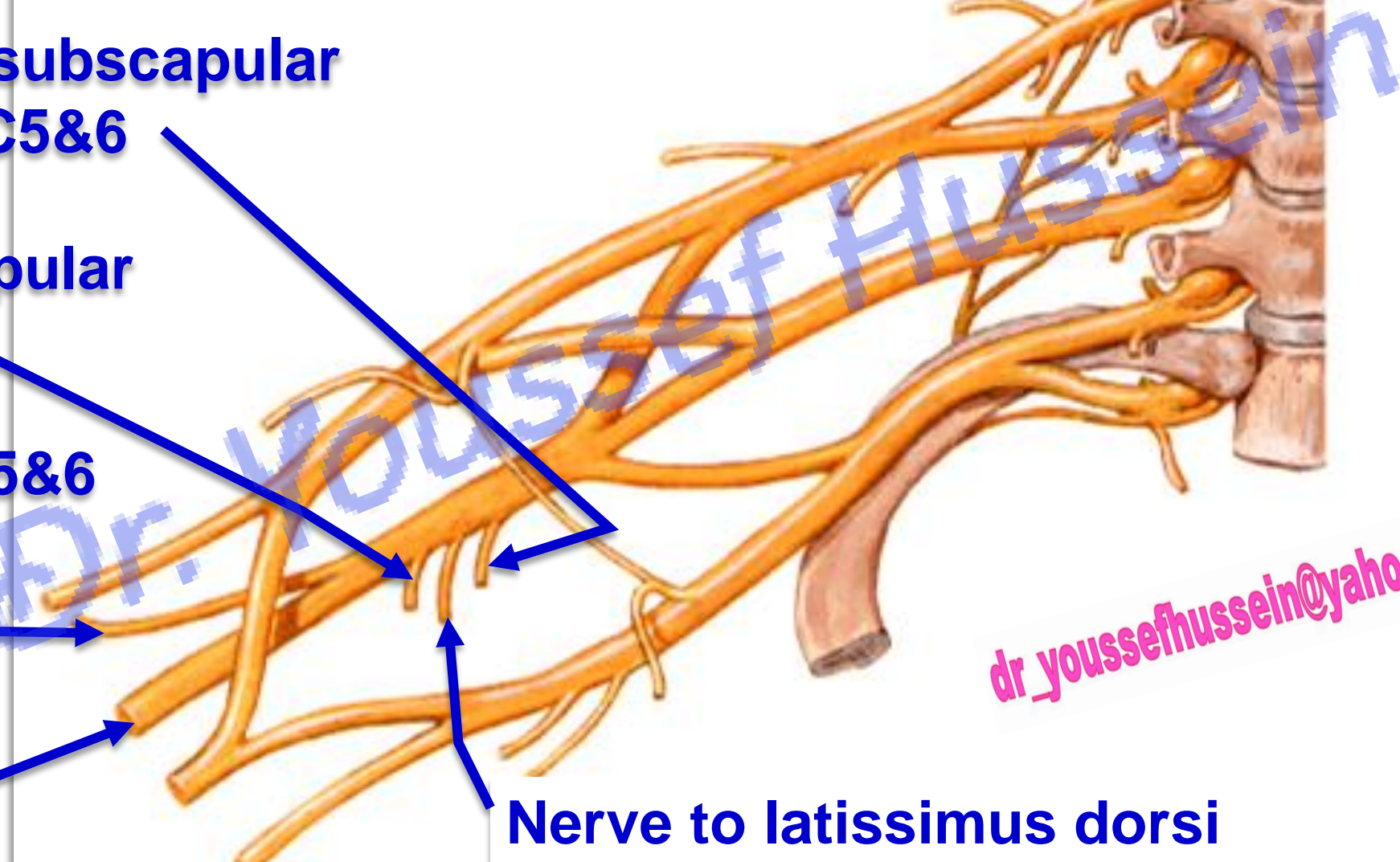
**Upper subscapular
nerve C5&6**

**Lower subscapular
nerve C5&6**

Axillary nerve C5&6

**Radial nerve
C5,6,7,8&T1**

**Nerve to latissimus dorsi
(thoracodorsal nerve) C6,7, &8**



Injury of Brachial plexus

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❖ Complete injury of brachial plexus leads to

1- Motor changes, Paralysis of all muscles of the upper limb **except trapezius** (supplied by spinal part of accessory nerve).

2- Sensory changes, Complete loss of sensations from the upper limb **except** الأيوتوب د. يوسف حسين

a) **Skin over the upper half of the deltoid** (Supplied by lateral supraclavicular nerve from cervical plexus).

b) **Skin of the upper part of the medial side of the arm and floor of axilla** (Supplied by the intercostobrachial nerve from the 2nd intercostal nerve).

3- Horner's syndrome (ptosis, miosis, anhidrosis and enophthalmos) due to disrupting the first sympathetic ganglion (T1).

❖ Injury of the upper trunk (C5&6)

❖ Erb's paralysis

- The commonest injury of brachial plexus.

- **Erb's point**; is the point of meeting of
6 nerves,

A- Root of C5

B- Root of C6

C- Suprascapular nerve

D- Nerve to subclavius

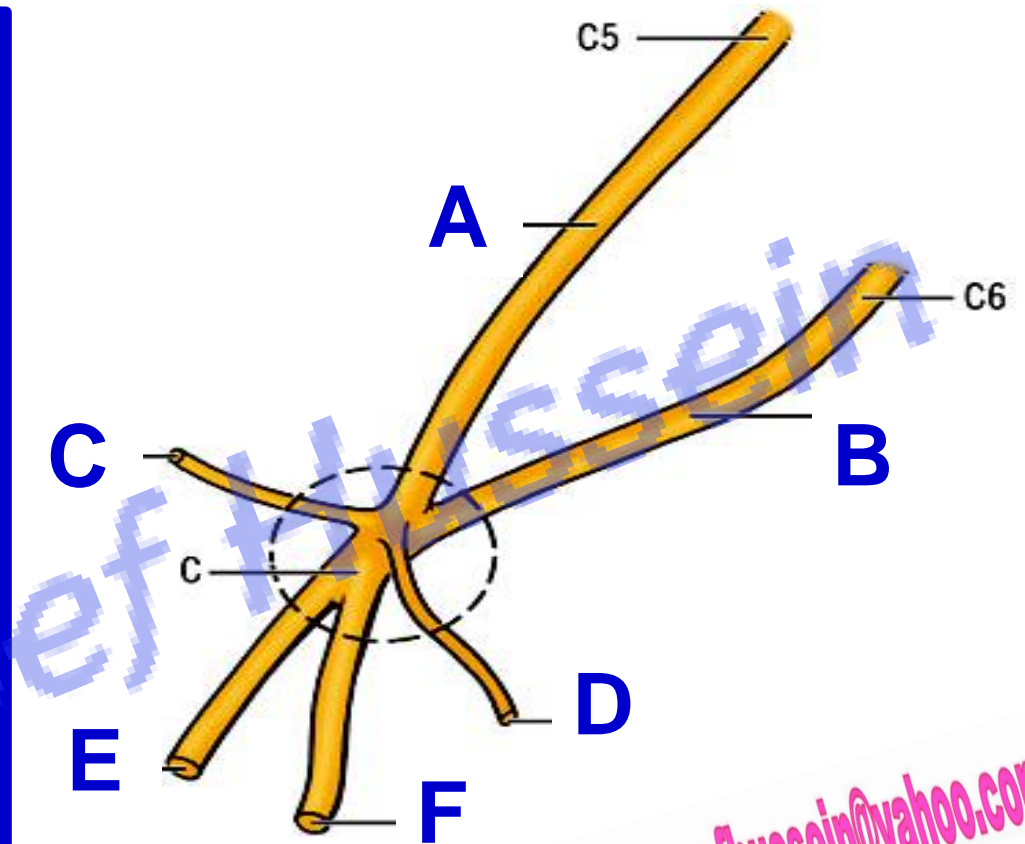
E- Anterior division of the upper trunk

F- Posterior division of the upper trunk

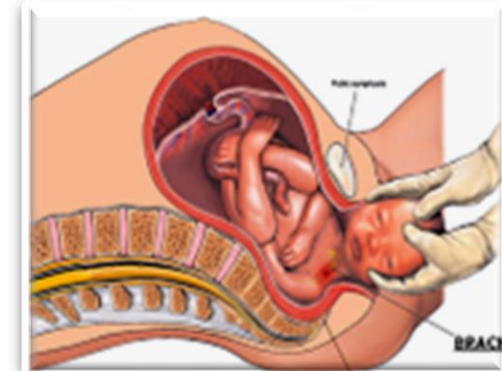
Causes: 1- Excessive lateral flexion of the neck during labor.

2- Falling on the shoulder.

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dr_youssefhussein@yahoo.com



1- Motor affection;

1) **Adduction of the arm** due to paralysis of abductor muscles (supraspinatus, deltoid).

2) **Medial rotation of the arm** due to paralysis lateral rotator muscles (infraspinatus and teres minor).

3) **Extension of the elbow joint** due to paralysis of the flexor muscles (brachialis, biceps, brachioradialis).

4) **Pronation of the forearm** due to paralysis of the supinator muscles (brachioradialis, biceps, and supinator). [Prof. Dr. Youssef Hussein Anatomy - YouTube](#)

- **Deformity; Policeman's position** (waiter's tip position of the upper limb).

2- **Sensory changes**, loss of sensation on the lateral side of arm, and forearm.



❖ injury of the lower trunk (C8&T1)

❖ Klumpke's paralysis

❖ (complete injury of median and ulnar nerves)

Causes, severe abduction of the arm.

1- Motor changes; paralysis usually affects

a) The flexors of the wrist and fingers.

b) All the intrinsic muscles of the hand.

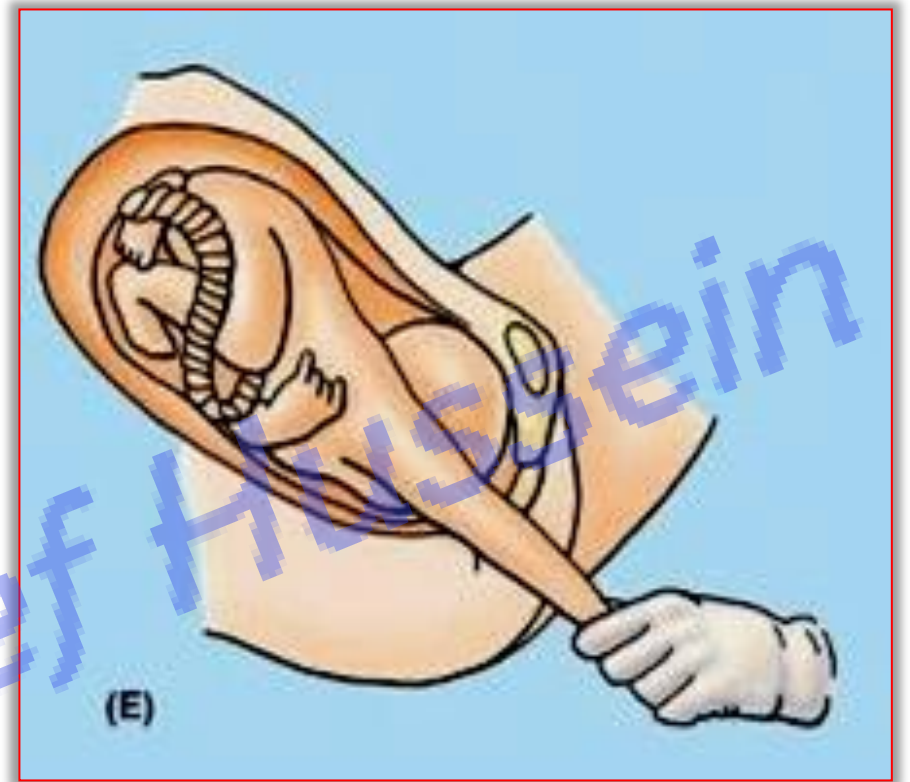
- Deformity: complete claw hand

(1) Hyperextension of the wrist and metacarpophalangeal joints

(2) Flexion of the interphalangeal joints.

2- Sensory changes, loss of sensation on the medial side of arm, forearm and hand.

3- Horner's syndrome due to disrupting the first sympathetic ganglion (T1).





Axilla

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dr.youssefhusssein@yahoo.com

The **axilla** is the pyramidal space between the upper part of the arm and the thoracic wall.

❖ **Apex of the axilla**

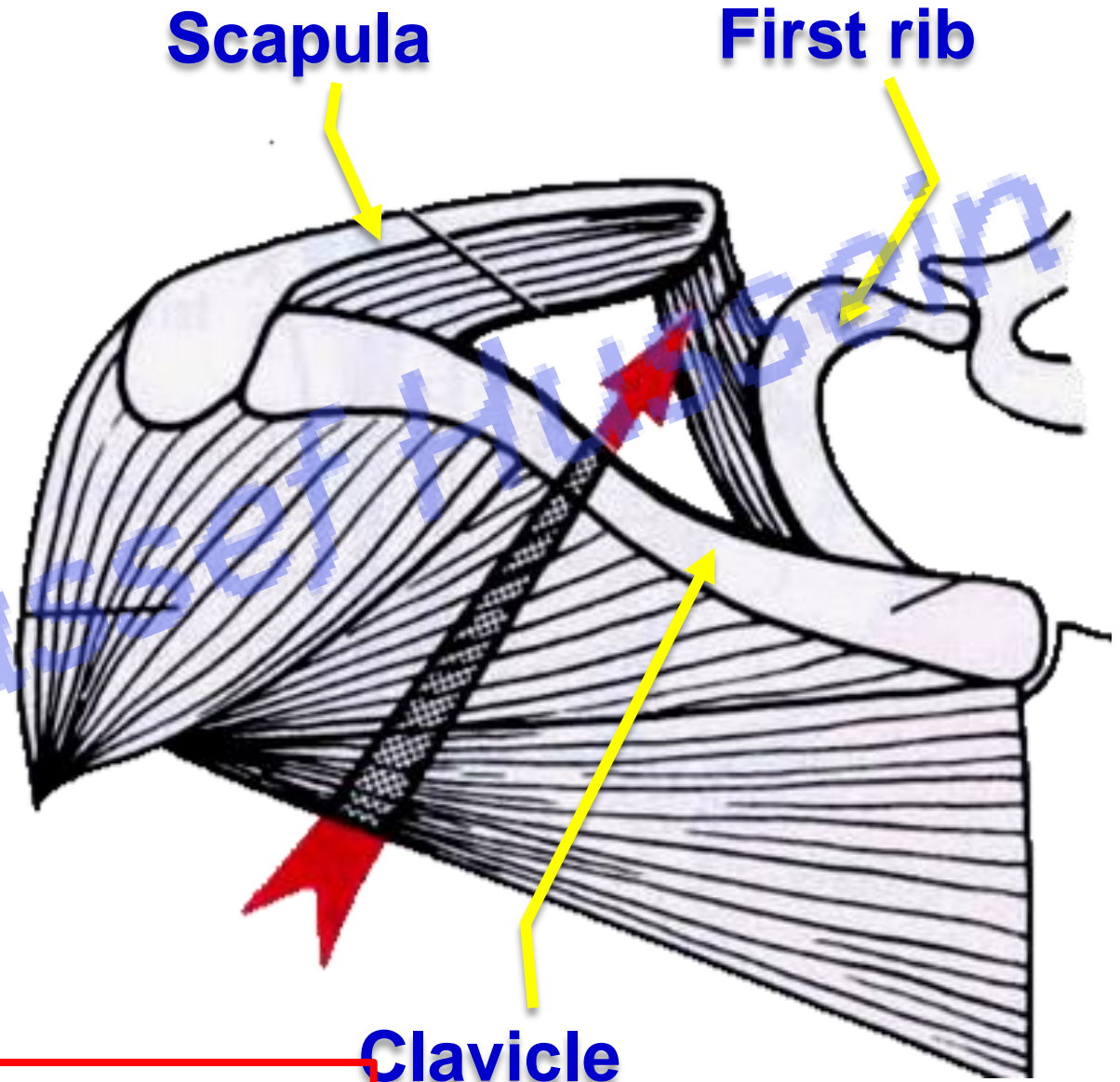
❖ **(Cervico-axillary canal)**

- It allows the passage of nerves and blood vessels to the upper limb
- It is connected to the posterior triangle of the neck, is a triangular interval which is bounded by:

1) AnteriorlyMiddle 1/3 of the clavicle.

2) PosteriorlyUpper border of the scapula.

3) MediallyOuter border of the first rib.



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**** Base of the axilla:** is formed by the skin containing hairs and fascia.

Posterior wall

Anterior wall

Subscapularis

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Teres major

Latissimus dorsi

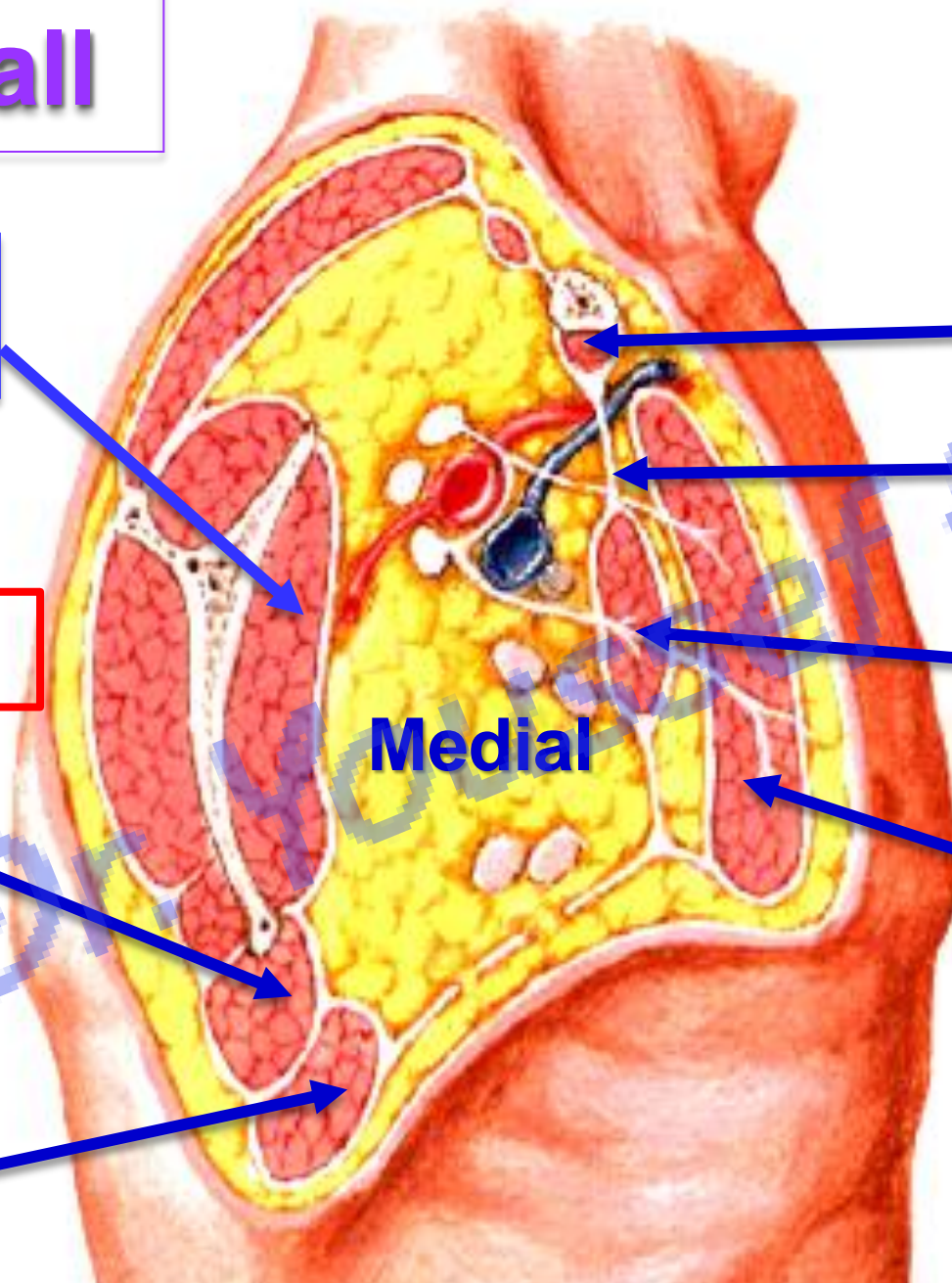
Subclavius

Clavipectoral fascia

Pectoralis minor

Pectoralis major

Medial



The anterior fold of the axilla is higher than the posterior fold

**** Anterior wall of the axilla: is formed of 2 layers:**

1- Superficial layer: pectoralis major (anterior axillary fold). .

2- Deep layer:

a- Pectoralis minor muscle.

b- Clavipectoral fascia.

c- Subclavius muscle.

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**** Posterior wall of the axilla: (SLT) is formed by**

a- Subscapularis muscle.

b- Teres major muscle.

c- Latissimus dorsi muscle (posterior axillary fold).

**** Medial wall of the axilla: is formed by:**

a- Upper 4 ribs and intercostal spaces containing intercostal muscles, nerves & vessels.

b- Upper part of the serratus anterior.

**** Lateral wall of the axilla: is formed by**

a- Surgical neck of the humerus.

b- Coracobrachialis and short head of biceps muscle.

**** Contents of the axilla:**

- 1. Axillary artery** and its branches.
- 2. Axillary vein** and its tributaries.
- 3. Axillary nerve.**
- 4. Axillary lymph nodes.**
- 5. Axillary fat.**
- 6. Axillary tail of the breast.**
- 7. Cords of the brachial plexus** and their branches.
- 8. Intercostobrachial nerve** (lateral cutaneous branch of the 2nd intercostal nerve).

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- **The axillary vessels and cords of the brachial plexus** pass from the apex to the base close to the lateral wall. Accordingly, **incisions in the axilla** are done **longitudinally through the base nearer to the medial wall to** avoid injury of the big vessels and nerves.
- **The skin has abundant hair**, so infection of this hair is common forming a boils.

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Thank You

Questions

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